APPENDIX B

NBC Operations

CONTENTS

DEFENSE MEASURES

Contamination avoidance, protection (individual and collective), and decontamination are the basic measures for defense against NBC hazards. FSB personnel must be trained in these defensive measures to minimize the effects of NBC attacks. FMs 3-3, 3-4, 3-5, and 3-100 have details.

PLANNING

The plans-operations branch of the S2/S3 section is responsible for developing the NBC defense plan. The branch reviews the tactical SOP and the brigade NBC vulnerability analysis to develop the plan. The plan must include an NBC defense requirement forecast and a set of priorities for decontamination of the FSB assets. It also identifies backup command and control procedures and components of and procedures for NBC control parties. Procedures for NBC equipment operators are also included. In developing the plan, the branch coordinates with the following elements:

- FSB S1 and medical company for medical evacuation and treatment support.
- Support operations section for alternate methods of providing supply, services, and maintenance support.
- Communications branch of the S2/S3 section for alternate lines of communication.

CONTAMINATION AVOIDANCE

The main defensive measure against NBC hazards is contamination avoidance. This reduces and sometimes eliminates requirements for protection and decontamination. Measures include—

- Taking passive measures such as dispersion, cover, concealment, deception, camouflage, and OPSEC.
- Limiting contamination spread. Measures may be taken before, during, and after an NBC attack to limit the spread and exposure to other individuals, equipment, and areas. These include prescribing levels of MOPP.
- Detecting, identifying, and marking. Advance warning is vital to avoidance.

Remote and local automatic alarms are deployed to provide early detection, warning, and identification of NBC hazards. The FSB S2/S3 will ensure that all contaminated areas in the BSA are properly marked with the NBC contamination marking set. All contamination areas are reported to the brigade and DISCOM headquarters. FMs 3-3 and 3-100 cover NBC marking.

- Issuing contamination warnings. Warning signals should be designated in advance. They are normally initiated by the BCOC.

- Relocating to an uncontaminated area. Unless the attack consists of a nonpersistent chemical agent, the BSA is generally moved as soon as the tactical situation allows to minimize exposure to residual hazards. The FSB commander must consider the tactical situation, support requirements, protection provided by the current BSA location, and increased exposure to the hazard incurred by movement. He must also consider the possibility that the threat's intention in using the NBC attack may be to cause the BSA to move. In addition, he must consider the possibility of further NBC attacks and the impact of continuing to support in an increased MOPP level. Movement may involve distances from 100 meters for certain FSB elements to several kilometers for the whole BSA.

Additional information on contamination avoidance is in FM 3-3.

PROTECTION

The FSB S2/S3 directs the response to an NBC attack. He is responsible for alerting higher, lower, and adjacent units. He sends all required NBC reports to the DISCOM S2/S3 and brigade S3. He arranges for additional support from the DISCOM S2/S3 or brigade S3.

On the individual soldier level, the best protection against a nuclear attack is to be well dug in with overhead cover. Deeply dug foxholes, caves, tunnels, or storm drains provide good protection. Most buildings do not. Basements of concrete or steel framed buildings may be adequate if available. Personnel should react immediately to the initial sign of attack, a flash. They drop to the ground or into a foxhole immediately without trying to move to cover. They close their eyes, put arms near or under their bodies, and keep helmets on. They should stay down until the shock wave has passed and returned. Once it has passed, injuries should be treated and preparations should be made for ensuing fallout. The area should be monitored and appropriate actions taken. Improvements may be made to shelters and food and water should be placed in protected areas.

The basic individual protection against a biological agent attack is the wearing of the protective mask with hood attached. The duty uniform and gloves provide additional protection against bites from vectors such as mosquitoes and ticks.

In a chemical environment, personnel must wear MOPP gear to protect themselves from contamination. To determine the level of MOPP, the FSB S2/S3 should use the procedures in FM 3-100. The S2/S3 recommends MOPP level to the FSB commander. The commander is responsible for designating MOPP level. All soldiers must know the signals and alarms and react to them quickly. Detection personnel should be designated in advance to survey contaminated areas.

DECONTAMINATION

When personnel, equipment, and areas within the BSA have been exposed to NBC

contamination, decontamination measures must be taken. With chemical agents, steps must be taken immediately. Deliberate decontamination is rare and limited to vital areas. Most items can be decontaminated with soap and water or decontaminating apparatus. The same applies to contamination with a biological toxin. Radiological decontamination is accomplished by aging, sealing, or removal.

On the basis of input from the NBC NCO and the brigade surgeon, the S2/S3 recommends to the FSB commander priorities for the FSB units to be decontaminated when deliberate decontamination is required. Company commanders are required to list in unit SOPS the priorities within their units. The FSB has no organic assets to perform deliberate decontamination. If it is required, support may be provided by a decontamination platoon of the chemical company supporting the brigade, though priorities are set by the brigade commander. If the FSB receives this support, the S2/S3 identifies decontamination areas. He also directs and monitors the operations to ensure priorities are being followed. In addition to his decontamination responsibilities, the S2/S3 must direct the exchange of MOPP gear and request replenishment of NBC defense equipment and supplies from the FSB S4.

Decontamination procedures are outlined in FM 3-5.

SUPPORT MISSION IMPLICATIONS

Priorities must be set in advance to ensure effective logistics support during NBC attacks. Normally, supply of ammunition, fuel, food, water, and chemical defense equipment and essential maintenance are given the highest priorities. Planning must emphasize the flow of supplies by increased throughput. Alternate channels and procedures are arranged for each type of support.

SUPPLY

In an NBC environment, the most critical supply items are issued on an automatic basis. Emergency resupply may be by air. Contaminated stocks are normally not issued. Until fully decontaminated, they are segregrated from clean stocks. In emergencies, when not enough uncontaminated supplies are available, contaminated supplies may be used under certain conditions. They are only issued if they would give the receiving unit a decisive tactical advantage. Contaminated supplies would be issued first to units similarly contaminated. Only under the most dire circumstances would contaminated stocks be issued to an uncontaminated unit. The decision to issue contaminated items would be made jointly by the issuing and receiving commanders. The decision is based on the tactical situation, criticality of items, type and extent of contamination, and resources available for decontamination. Every attempt to avoid unnecessary spread of contamination must be made. Contaminated stocks must be clearly marked using standard NATO NBC markers.

Class I and Water

Preplanned resupply is not normally provided to units operating in or near contaminated areas. Units carry enough operational rations to operate without resupply for several days.

Rations are stored under protective covering or in containers to prevent or reduce contamination. If rations are contaminated,

they are not normally issued. Decontamination efforts are limited to removing the containers and carton overwrap. Supporting chemical and medical personnel provide technical assistance.

Contaminated water is not issued or used. Water from local sources, such as lakes, ponds, and water systems, can become contaminated. Therefore, local sources must be tested before use. Frequent testing is required. If a water source is suspected of contamination, it is marked with appropriate NATO NBC contamination markers. It is not used until it is tested, treated if necessary, and determined that the water is safe. Whenever water becomes contaminated and cannot be treated for drinking, it is disposed of to prevent secondary contamination. The area is marked appropriately. All water treatment, storage, dispensing, and associated equipment, such as pumps and filters, are monitored frequently for possible contamination. Decontamination procedures are outlined in FM 3-5.

Class II

Critical class II items, such as chemical defense equipment, receive priority of issue to selected units on an NBC battlefield. Highest priority support is given to units located in contaminated areas. The next priority is to units that recently left contaminated areas. The third priority is to units deployed in forward areas.

Class III

Class III supply is critical in NBC environments. More frequent unit moves increase consumption. Emergency resupply of isolated units may be by air. Storage tanks protect bulk petroleum to a large degree. However, caution must be taken to reduce contamination on tanks.

Class V

Resupply is done at night as much as possible. Ammunition support elements are responsible for decontaminating ammunition under their control, though deliberate decontamination may require additional support. If the situation requires the issue of contaminated stocks, the standard NATO NBC marker will be used. After issue, the user performs required decontamination.

Class IX

Contaminated class IX items are normally issued only in emergencies. In such cases, contaminated items for critical weapon systems may be issued. Before issue, the items are marked with the standard NATO NBC markers. Repair parts, especially sensitive electronic parts, must be checked for damage before issue.

MAINTENANCE

Maintenance company personnel face a particular risk due to the fact that petroleum products trap chemical contamination. They collect in bolt threads, hydraulic fluids, and closed assemblies. Hence, a vehicle may be safe to drive without MOPP 4, but not be safe to repair. Also, since oil, grease, and dirt degrade the effectiveness of chemical overgarments, mechanics must keep as clean as possible. Wet weather gear helps but causes heat buildup. As much as possible, maintenance company elements should operate in protected areas like underground garages and concrete buildings.

When possible, the maintenance company will operate both clean and contaminated repair areas. Repairs can be done much faster in clean areas. Inspectors ensure that contaminated equipment does not enter the clean area. Contaminated equipment is identified with NATO NBC markers. If contaminated with a nonpersistent agent and

repair cannot be performed in MOPP 4, the item may be left to weather (which is unlikely due to time constraints) or decontaminated if cost effective. If contaminated with a persistent agent, contaminated components should be replaced with the next higher assembly that can be replaced in MOPP 4.

On-site repair and recovery of contaminated equipment should not be done by uncontaminated teams. Contaminated equipment will be moved by other contaminated vehicles whenever possible. Otherwise repairs are done in MOPP 4, or the equipment is decontaminated. Contaminated tools and equipment should be kept segregated and used on other contaminated equipment.

Physical or emotional constraints may limit the time personnel can operate in MOPP 4 on contaminated equipment. Repair may be limited to the most critical items. Monitors should keep track of the level of contamination.

FM **43-12** has more on NBC maintenance operations in forward areas.

MEDICAL

Large numbers of patients and the loss of medical facilities and personnel will greatly affect health service support. Advanced stages of MOPP result in heat buildup, reduced mobility, and degradation of sight, touch, and hearing. Individual and unit operational effectiveness and productivity are degraded. Medical units in the brigade sector will require augmentation commensurate with the threat to continue operations in an NBC environment. Typical requirements include additional trauma treatment personnel and equipment, additional ambulance teams, and nonmedical personnel for patient decontamination. Detailed doctrine on medical operations in an NBC environment is in FMs 8-9 and 8-285, TC 8-12, and TM 8-215.

Contamination is a major problem. To maximize survivability and effectiveness, medical units must take action to avoid contamination and lessen the initial effects of nuclear weapons. Medical supplies and equipment should be protected from contamination by chemical agent-resistant coatings or protective coverings. Class VIII stocks are dispersed to minimize damage and contamination. Contaminated items are decontaminated before issue.

Each physically capable soldier is responsible to decontaminate himself and his equipment as soon as possible. Decontamination stations should be set up at medical treatment facilities. They should be conveniently located for the flow of patient traffic. See Figure B-1. Patients should be decontaminated before evacuation. Medical units are responsible only for the decontamination of patients who have reached medical facilities and are unable to perform self-aid. Patients will not be admitted to clean areas of MTFs in clothing or blankets known or suspected of being contaminated. Sometimes, a contaminated patient will require immediate treatment. No decontamination procedure should preclude required lifesaving procedures. A contaminated patient is treated in the contaminated treatment area. SOPS will govern the use of prophylactic measures for a known or suspected biological or chemical agent attack.

After a nuclear attack, individuals who suspect radiation injury may reach the MTF to seek medical attention. Suspected nuclear radiation injury alone, without specific symptoms and physical findings, does not justify evacuation. Usually, in nuclear and conventional warfare, burns and traumatic injury will be the basis for early medical care and evacuation.

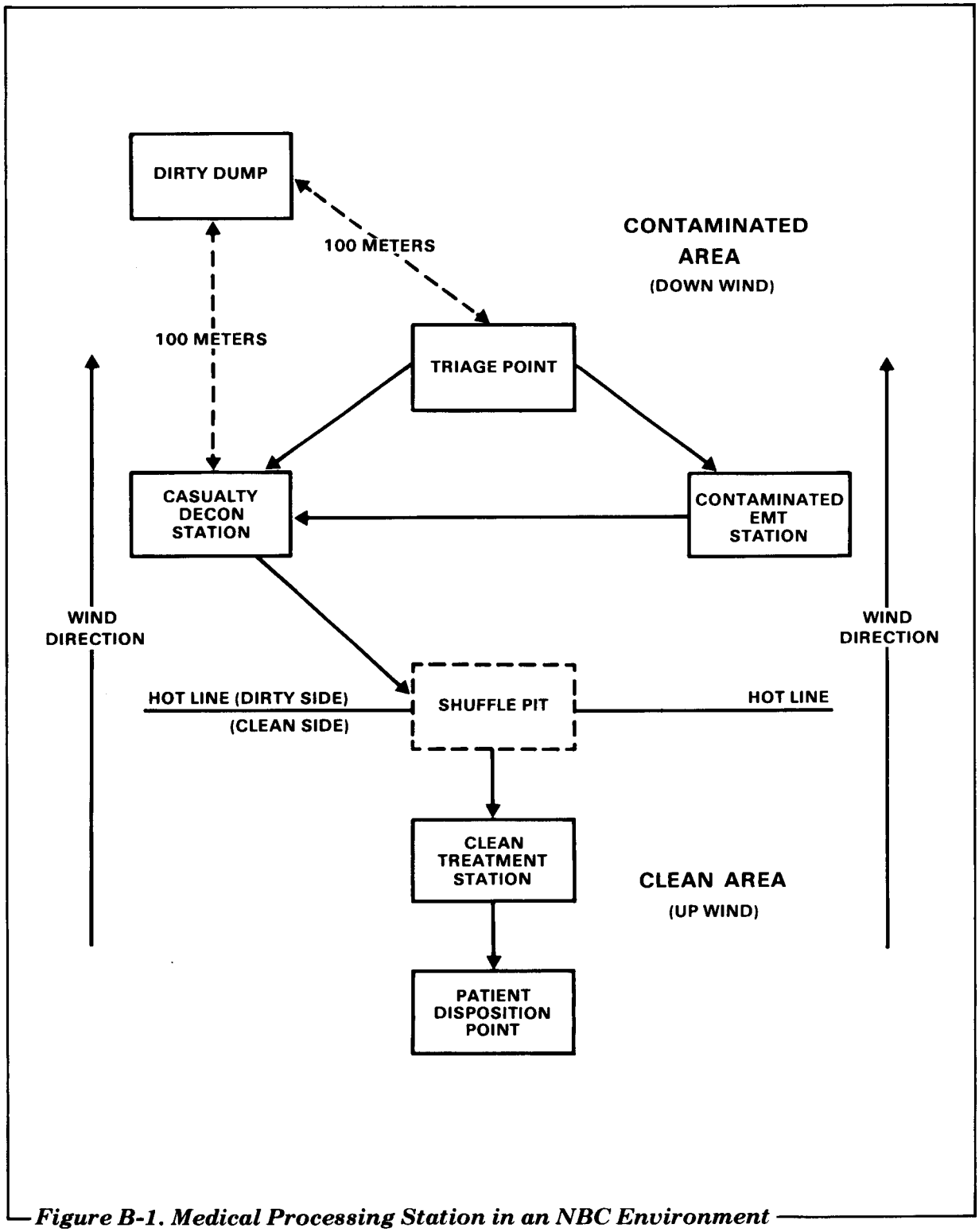

Figure B-1. Medical Processing Station in an NBC Environment